

Practical WebGPU Graphics: Creating Advanced Graphics on Web Using WebGPU the Next-Generation Graphics API By Jack Xu Recently he works as a quantitative analyst and developer on Wall Street and is responsible for quantitative analysis back testing trading strategy development and real time trading system design and implementation. com/graphics which allows users to create various charts and graphics by simply entering a math formula pasting a dataset or uploading a data file; and without the need to write a single line of code. At the same time you will learn how to create advanced 3D WebGPU objects including various 3D wireframes 3D shapes simple and parametric 3D surfaces with colormaps and textures as well as 3D surface plots and fractal graphics described by complex functions, He has over 20 years programming experience in C C++ Matlab C# WPF ASP: NET Angular JavaScript frameworks specializing in numerical computation methods algorithms graphical user interfaces and web applications: WebGPU is the next generation graphics API and future web standard for graphics and compute aiming to provide modern 3D graphics and computation capabilities with the GPU acceleration. This book provides all the tools you need to help you create advanced 3D graphics and GPU computing on the web with this new WebGPU API: The book starts by taking you through the WebPack TypeScript template for building the WebGPU apps and then shows you the WebGPU basics shader program GPU buffer and rendering pipeline, Next you will learn how to create primitives and simple objects in WebGPU: As you progress through the chapters you will get to grips with advanced WebGPU topics including 3D transformation lighting calculation colormaps and textures: In addition you will explore new WebGPU features such as compute shader and storage buffer and how to use them to simulate large particle systems. By the end of this book you will have the skill you need to build your own GPU accelerated graphics and computing on the web with the WebGPU API, The book includes: Template based on WebPack and TypeScript for developing WebGPU apps, 3D transformations model viewing projection and various coordinate systems, GPU buffers uniform buffer objects animation and camera controls. Normal vectors lighting model ambient diffuse and specular light calculations. Compute shaders storage buffers and large particle system simulation. Practical WebGPU Graphics: Creating Advanced Graphics on Web Using WebGPU the Next-Generation Graphics API



[1]

Dr. Jack Xu has a PhD in theoretical physics. You can visit his website at for information about Dr. Xus book. He also creates a charts and graphics playground at gincker. WebGPU basics GLSL and WGSL shaders and rendering pipeline. Create primitives and simple shapes in WebGPU. UV coordinates texture mapping. Color model colormaps and color interpolation. Create 3D shapes wireframes surfaces and 3D charts. Create 3D plots and fractal graphics using complex functions